

THE FIRST SPECIES OF STAURANTHERA
(GESNERIACEAE) FROM NEW GUINEA, WITH
GENERAL NOTES ON THE GENUS

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ALTHOUGH *Stauranthera* Benthham is listed in Willis (1973) as a genus of ten species, on closer study that number proves to have been a little generous. To date, twelve names have been published. *Stauranthera chiritiflora* Oliver has become the type species of *Whytockia* W. W. Sm. (Smith, 1919), and *S. tsiangiana* Hand.-Mazz. also belongs to *Whytockia* (Weber, 1982). Merrill (1923) reduced both *S. ecalcarata* R. Br. and *S. philippinensis* Elmer to synonymy under *S. caerulea* (Blume) Merr., but for the present I am inclined not to include *S. philippinensis* there. *Stauranthera brandisii* C. B. Clarke, described almost simultaneously as *Rhynchotechum brandisii* C. B. Clarke, is of uncertain identity but is not a *Stauranthera* (see Burtt, 1962, p. 37, to which it can now be added that on the isotype at Calcutta, infructescence and leaves are joined, so there is no doubt that they belong together). Finally, I now reduce *S. johannis-winkleri* Kränzlin to a synonym of *S. argyrescens* Hallier f.

This leaves seven species, ranging from northeastern India and Bangladesh to Celebes (Sulawesi): *Stauranthera umbrosa* (Griff.) C. B. Clarke, from NE India, Burma, S China, and the Malay Peninsula; *S. grandiflora* Benthham, from NE India, Bangladesh, Burma, Thailand, the Malay Peninsula, and Sumatra; *S. caerulea* (Blume) Merr., from Sumatra, Java, and (?) Celebes; *S. ionantha* Hallier f. and *S. parvifolia* S. Moore, both endemic to Sumatra; *S. argyrescens* Hallier f., from Borneo; and *S. philippinensis* Elmer, from the Philippines. Some of these records (partly culled from the literature) require verification. I have not seen *S. ionantha* or *S. parvifolia*. The distinction between *S. umbrosa* and *S. caerulea* is not always clear.

The discovery of a distinct species in New Guinea greatly extends the generic range of *Stauranthera*. When a western Malesian genus is discovered in New Guinea, it is natural to seek possible lines of contact as indicated by the affinities of the species. Unfortunately, *S. novoguineensis* does not provide particularly strong clues, especially while the *S. caerulea*–*S. philippinensis* problem awaits clarification. There seem to be two affinities, as indicated in the diagnosis. One, with the eastern Bornean *S. argyrescens* Hallier f., rests on just a single character that is uniquely shared by these two species: the presence of filiform sclereids (Hallier's "Faserzellen") in the mesophyll. These may be simple or slightly branched toward the tips. They are not known in other species, and since their presence can be detected in the dried leaf by the characteristic ripples on the surface (easily visible with a $\times 10$ hand lens), it seems fairly certain that they

do not occur. In general facies, especially in leaf shape, *S. novoguineensis* is closer to *S. philippinensis*—a species that lacks sclereids and seems to have slightly different flowers but nevertheless appears to provide the closest affinity for the new species.

An additional floristic link between New Guinea and the Philippines is always of interest and merits comparison with other examples within the family. In *Agalmyla* Blume (incl. *Dichrotrichum* Reinw.) the link is evidenced by the fact that most of the species with long-pedunculate inflorescences are found in New Guinea, the Moluccas, and the Philippines. *Epithema benthamii* C. B. Clarke, described from the Philippines, occurs also on the New Guinea mainland. *Cyrtandra tarsodes* B. L. Burtt, of New Guinea, is most closely related to *C. auriculata* C. B. Clarke, from the Philippines (Burtt, 1971). These two species are rather isolated in the genus as a whole, but in general the much-branched, shrubby New Guinea species of *Cyrtandra* are more closely related to the many species of similar habit in the Philippines than they are to the larger-leaved, single-stemmed species that predominate in Borneo.

In a collection of essays on Wallace's line (Whitmore, 1980), the composition of the eastern Malesian flora and fauna is reexamined in relation to the recent findings on plate tectonics. It is suggested that Australia–New Guinea drifted northward and made contact with the Laurasian outliers of Celebes about 15 million years ago. Celebes may have a central suture, making it half Asiatic and half Australasian. At about the same time, New Guinea collided with a “tertiary island” to the north, eventually resulting in the upthrusting of the central mountain spine; New Guinea is thus also of mixed “parentage.”

In the botanical essays in this volume, attention is focused on Wallace's line and on the east-west interchange through the unstable archipelagic area between Celebes and New Guinea termed “Wallacea” by a number of biogeographers; there is no further mention of the “tertiary island” or “tertiary arc” (Raven, 1979) with which New Guinea is said to have collided. If it carried a Philippine-type flora, it could well have been responsible for the New Guinea–Philippine links that Corner (e.g., 1967, p. 45) ascribed on phytogeographic grounds to an old Melanesian foreland.

Stauranthera is a very distinctive genus marked by its strongly plicate calyx and by the cruciform arrangement of its four anthers. It is always strongly anisophyllous, with the small leaf reduced to a lateral auricle. The structure of its shoot and inflorescence has recently been elucidated by A. Weber (1977); he suggests a fairly close affinity to *Loxonia* Jack, with which I certainly agree. *Stauranthera grandiflora* Benthams, the type species of the genus, has a strongly spurred corolla—a feature included in the original generic description but not present in any other species and clearly not of generic significance.

Herbarium material of *Stauranthera* is often inadequate: corollas fall quickly, and the somewhat succulent plants require more careful drying than they sometimes receive. Although a wider range of good specimens is essential before the genus can be satisfactorily revised, the records of two species, *S. argyrescens* and *S. grandiflora*, are extended here.

Stauranthera argyrescens Hallier f. Ann. Jard. Bot. Buitenzorg **13**: 286. 1896.

TYPE: Kalimantan, Amai Ambit, ca. 600 m alt., cult. in Horto Bogoriensi, *Hallier B3453* (BO, n.v.).

S. johannis-winkleri Kränzlin, Mitt. Inst. Allg. Bot. Hamburg **7**: 92. 1927. TYPE: West Borneo [Kalimantan], Bukit Mulu, Urwald, ca. 700 m alt., 1 December 1924, *Winkler 453* (HBG, photo E).

SPECIMENS EXAMINED. **Indonesia**. BORNEO. Kalimantan Timur: Central Kutei, Belajan R., G. Kelepoh, near Tabang, forest, sandy yellow loam, in rivulet, 50 m alt., *Kostermans 10429* (L); around Jellini, along S Belajan, NW of Tabang, tropical rain forest, 100–150 m alt., *Murata et al. B1126* (L); Gunung Kongkat–G. Kongbotak, 1°10'N, 116°20'E, lowland rain forest, 150–200 m alt., *Kata & Wiriadinata B5156* (L); W Kutei, G. Kelepoh, near Tabang on Belajan R., yellow loam, low alt., *Kostermans 10596A* (L); E Kutei, S Menubar region, ridge, loam soil with limestone, 30 m alt., *Kostermans 5228* (L).

I have not seen the type of *Stauranthera argyrescens*, but I have little doubt that all the material cited above belongs to this species. Hallier described a plant that flowered in the Botanic Garden after having been transported from Borneo. His illustration suggests a stunted plant that had not fully recovered from the move. The other specimens all have a distinctly pedunculate inflorescence and obvious internodes. Hallier derived his specific epithet from the silvery patches on the leaves—a character not noted by other collectors, but one that is not constant in other rain-forest herbs (cf. Burt, 1976). This species has distinctive filiform leaf-sclereids that were noted by Hallier and are present in all the material cited, including the type of *S. johannis-winkleri*. They are not known in any other species except *S. novoguineensis* (described below).

Stauranthera grandiflora Benth. Ind. 57. 1835—sphalmate “grandifolia”; C. B. Clarke in A. & C. DC. Monogr. Phanerog. **5**: 190. 1883, and in Hooker f. Fl. Brit. India **4**: 371. 1884. TYPE: Penang, *Wallich 6395* (K).

Glossanthus? grandiflorus Benth. in Wallich, Num. List, 6395. 1832, nomen nudum.

GENERAL DISTRIBUTION. Thailand, Burma, Bangladesh, Malay Peninsula, Sumatra.

NEW RECORDS. **India**. GREAT NICOBAR IS.: Laful, rocky streambed inside dense forest, 10 m alt., *Hore 8777* (E, PBL). **Malay Peninsula**. SELANGOR: Ulu Gombak, descent to river at mile 22, ca. 427 m alt., *Burt & Woods B1610* (E).

The species has not previously been recorded from the Nicobar Islands. The record from Ulu Gombak is new merely from a local point of view: the species is not in Henderson's list of Kuala Lumpur plants (Henderson, 1928).

This species is often referred to as *Stauranthera grandifolia*, as it was originally printed. However, C. B. Clarke reported that Benth. himself admitted that this was a printing error, and the citation of the earlier *Glossanthus? grandiflorus* at the time of publication confirms this. The species should therefore be known as *S. grandiflora*.

Stauranthera novoguineensis B. L. Burtt, sp. nov.

Stauranthera philippinensi Elmer affinis, sed ovario ellipsoideo glabro (nec sphaerico pubescente), stylo longiore, stigmatibus bilamellato (nec capitato), foliis sclereidis filiformibus praeditis distinguenda. *S. argyrescens* Hallier f., sclereidis foliorum *S. novoguineensi* congruit sed habitu humiliore et foliis oblique obovatis apice rotundatis longe recedit.

Herba caule ad 10 cm longo erecto vel basi decumbente in siccitate brunneo longitudinaliter rugoso (in vivo subcarnoso?) basi radicante. Folia ut videtur alterna, altero cujusque paris ad auriculam lateralem ca. 2×4 mm redacto; petiolus 1–2.5 cm longus, pilis brevibus patentibus indutus; lamina 10–16 \times 4–6 cm longa, inaequaliter (subfalcatis) elliptica, acuta vel breviter acuminata, basi inaequilateraliter angustata, marginibus irregulariter acute dentato-serrata, supra glabra in siccitate sclereidis rugulosa, infra ad venas leviter prominentes et ad venulas pilis brevibus saepe hamatis pubescens, venis lateralibus utrinsecus 5–7. Inflorescentia terminalis, simplex vel basi ramo uno praedita, ad 10 cm longa; pedunculus 4–7 cm, dimidio superiore bracteis sterilibus 1–2 ornatus, glaber; pedicelli 0.5–1 cm longi, pilis saepe hamatis breviter pilosi, ebracteati. Calyx ca. 7 mm longus, ad trientem 5-lobus, sinus conspicue plicatus, extra pilis saepe hamatis indutus, intus brevissime pubescens pilis paucis hamatis. Corolla rotata, ca. 1 cm longa, ad mediam subaequaliter 5-lobata, lobis ca. 5×5 mm apice rotundatis marginibus undulatis. Stamina fertilia 4, basi corollae orientia; filamenta filiformia ca. 2 mm longa, glabra; antherae obtuse triangulares, basi leviter cordatae, apicibus cruciatim cohaerentes. Ovarium ovoideo-oblongum, 1.5 mm longum, glabrum, in stylum fere aequilongum robustum parce patenter pubescentem transiens; stigma bilamellatum, marginibus ciliis planis ornatis.

TYPE. Papua New Guinea, West Sepik Prov., Carpentaria Expedition Base Camp, stream margin from K1 to K18 helipad, 340 m alt., January 1978, *W. S. Hoover* 832 (A).

ADDITIONAL SPECIMENS. **Papua New Guinea.** WEST SEPIK PROV. Telefomin Subdistr.: Prospect Creek near Frieda R., $4^{\circ}42'S$, $141^{\circ}48'E$, valley forest, 445 m alt., *Henty & Foreman NGF 42601* (L); Carpentaria Expedition Base Camp, stream margin NE of ridge above Storm Creek, 550 m alt., *Hoover* 768 (A).

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